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Appl. No. 10/597,124
Reply to Office Action Dated April 28, 2008

Amendments to the Claims:

1. (Currently amended) A system for separating a water/hydrocarbons emulsion fluid into a recovered oil fluid and a purified water fluid, the water/hydrocarbons emulsion fluid comprising a continuous phase and a dispersed phase, the purified water fluid being essentially constituted of the continuous phase, the system comprising:

a vessel at an inlet of which the water/hydrocarbons emulsion fluid may flow;

one or more coalescing ~~element~~ elements made of Reusable Polymer Absorbent material, each coalescing element allowing to coalesce at least a portion of the dispersed phase from small droplets into large drops, said large drops being further detached from the coalescing element upon a flow of the ~~emulsion~~ emulsion fluid;

one or more separating and guiding means made of an oleophilic material, each separating and guiding means being associated with one coalescing element and being disposed at an output of the associated coalescing element to guide said detached large drops for further recovery and having a structure that is adapted to allow the continuous phase to flow through the separating and guiding means.

2. (Currently amended) The system of claim 1, further comprising:

one or more ~~[[bed]]~~ beds, each bed allowing to support one coalescing element made of Reusable Polymer Absorbent material;

one or more recovery outlet outlets, each recovery outlet allowing to recover the recovered fluid ~~from~~ from large drops detached from one coalescing element.

3. (Previously presented) The system of claim 1, wherein each separating and guiding means is substantially located at 10 millimeters of the associated coalescing element so as to allow a burst of bubbles of the continuous phase, the bubbles being surrounded by a film of the dispersed phase, and the bubbles being formed between the coalescing element and the separating and guiding means.

4. (Currently amended) The system of claim 1, wherein each separating and guiding means comprises:

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a plurality of plates to intercept said detached large drops; wherein:
the plurality of plates are made of ~~[[an]]~~ the oleophilic material so that the intercepted large drops adhere to the plates;
the plurality of plates have a diagonal orientation adapted for guiding the adhered large drops upward.

5. (Currently amended) ~~[[The]]~~ A system of claim 1, for separating a water/hydrocarbons emulsion fluid into a recovered oil fluid and a purified water fluid, the water/hydrocarbons emulsion fluid comprising a continuous phase and a dispersed phase, the purified water fluid being essentially constituted of the continuous phase, the system comprising:

a vessel at an inlet of which the water/hydrocarbons emulsion fluid may flow;

at least two coalescing elements made of Reusable Polymer Absorbent material, each coalescing element allowing to coalesce at least a portion of the dispersed phase from small droplets into large drops, said large drops being further detached from the coalescing element upon a flow of the emulsion fluid;

one or more separating and guiding means, each separating and guiding means being associated with one coalescing element and being disposed at an output of the associated coalescing element to guide said detached large drops for further recovery and having a structure that is adapted to allow the continuous phase to flow through the separating and guiding means;

~~comprising at least two coalescing elements and further comprising~~ one or more ~~[[weir]]~~ weirs, each weir being associated with one coalescing element, said weir being located along and at an upstream side of the associated coalescing element, and said weir allowing to prevent the detached large drops of an upstream coalescing element to flow through the associated coalescing element.

6. (Previously presented) The system of claim 5, wherein each weir is located at an upper portion of the vessel.

7. (Currently amended) A method for recovering from a water/hydrocarbons emulsion fluid a recovered oil fluid and a purified water fluid, the water/hydrocarbons emulsion fluid

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comprising a continuous phase and a dispersed phase, the purified water fluid being essentially constituted of the continuous phase, the method comprising:

providing a flow of at least a portion of the water/hydrocarbons emulsion fluid through at least one bed within a vessel, each bed supporting a coalescing element made of Reusable Polymer Absorbent material, whereby at least a portion of the dispersed phase coalesces from small droplets into large drops;

detaching said large drops from each bed by means of a flow velocity;

guiding the detached large drops with at least one separating and guiding means made of an oleophilic material, the at least one separating and guiding means being associated with the at least one bed, said separating and guiding means having a structure that is adapted to allow the continuous phase to flow through the ~~separator~~ separating and guiding means;

recovering the recovered oil fluid from the guided large drops; and

recovering the purified water fluid from the continuous phase.

8. (Previously presented) The method of claim 7, further comprising:

repeating the coalescing, the detaching, the guiding and the recovering steps at a further location of the vessel.

9. (Previously presented) The method of claim 7, further comprising:

intercepting the detached large drops with at least one plate of the separating and guiding means, the large drops adhering onto the at least one plate;

guiding the adhered large drops along the at least one plate upon a flow velocity.

10. (New) A method for recovering from a water/hydrocarbons emulsion fluid a recovered oil fluid and a purified water fluid, the water/hydrocarbons emulsion fluid comprising a continuous phase and a dispersed phase, the purified water fluid being essentially constituted of the continuous phase, the method comprising:

providing a flow of at least a portion of the water/hydrocarbons emulsion fluid through at least two beds within a vessel, each bed supporting a coalescing element made of Reusable

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Polymer Absorbent material, whereby at least a portion of the dispersed phase coalesces from small droplets into large drops;

detaching said large drops from each bed by means of a flow velocity;

guiding the detached large drops with at least one separating and guiding means, the at least one separating and guiding means being associated with the at least one bed, said separating and guiding means having a structure that is adapted to allow the continuous phase to flow through the separating and guiding means;

recovering the recovered oil fluid from the guided large drops; [[and]]

recovering the purified water fluid from the continuous phase; and

allowing to prevent the detached large drops of an upstream coalescing element to flow through an associated coalescing element with one or more weirs, each weir being associated with one coalescing element, said weir being located along and at an upstream side of the associated coalescing element.

11. (New) The method of claim 10, wherein each weir is located at an upper portion of the vessel.